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ABSTRACT

The goal of a project was to reconcile current testing services and practice as related to vocational assessment with the requirements for testing itemized by Federal regulations implementing Section 504 of the Rehabilitation Act of 1973. A review of research related to the problem of testing and conducting a vocational assessment of handicapped persons revealed an absence of relevant references. Possible appropriate tests were reviewed. Findings of the research on tests were published in a testing manual for handicapped college students. This manual included a synthesis of the research and information on specific aptitude, ability, personality, and interest tests with appropriate adaptations for the handicapped student clearly stated. Implications of the project findings were that the counselor must be aware of the heterogeneity of handicapped people; the counselor needs to know the degree of impact due to the sensory or motor loss; the examiner must determine the degree of test failure attributed to impaired function of sight, hearing, or movement and the degree attributed to an inability to perform the task; and the examiner must be aware that adaptations will affect the outcome of a test in some unknown way. Field testing of the adaptive techniques was recommended. (YLB)

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ED262209

FINAL REPORT

OF

RESEARCH ON VOCATIONAL

ASSESSMENT OF THE PHYSICALLY HANDICAPPED

1983 - 1984

Brookdale Comm. College
Lincroft, N. J. 07738
(201) 842-1900

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Project Director
Harvey B. Schmelter-Davis
Director, Career Services

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PROJECT TITLE: Research on Vocational Assessment of the Physically Handicapped

LEGAL NAME OF APPLICANT DISTRICT, INSTITUTION OR AGENCY: Brookdale Community College

ADDRESS: Newman Springs Road

Lincroft, NJ 07738

PROJECT DIRECTOR: Harvey B. Schmelter-Davis

TELEPHONE NUMBER: 201-842-1900 x. 571

(Area Code)

ABSTRACT

DESCRIPTION OF PROJECT

(Use this sheet and no more than one other to type in single-spaced form a statement of project objectives, procedures that were followed, state and local priorities emphasized and the expected contribution of the project to vocational education.)

Many of the most important decisions made about individuals in our society such as placement in advanced, remedial, or special education programs, admission to college, choosing a career, selection for employment or a military assignment, are made, partly, on the basis of test results.

For years the testing of handicapped people has left much to be desired. And these problems related to testing serve to further frustrate handicapped people who are trying to demonstrate their abilities and to participate fully in American society. Regulations implementing Section 504 of the Rehabilitation Act of 1973 state that handicapped persons can be tested in a way that will not reflect the effects of their handicap and that the resulting test scores will be considered comparable to those of nonhandicapped people. The problems related to the testing of handicapped persons is complex but not insurmountable. With the mainstreaming of handicapped persons increasing numbers of guidance personnel, teachers, and counselors are being asked to assess the abilities, aptitudes, values, and career interests of handicapped persons. Some of the issues which must be addressed are:

> What type of adaptations of testing procedures of the environment are necessary to provide equal access for the individuals with different disabilities to the tests currently administered for vocational assessment to students at the college? Which of the possible adaptations are best?

What is the significance of the testing scores when administered within adapted testing situations? How are they to be interpreted?

Are there other testing instruments which are similar to those currently used with non-disabled populations which have been used with success with a particular disabled population? Do norms exist for that specific group?

What is the most cost and time efficient way to administer these vocational instruments and still preserve their validity and usefulness to the student?

It is our goal to reconcile current testing services and its practice as related to vocational assessment with the requirements for testing itemized by the federal regulations implementing Section 504 of the Rehabilitation Act of 1973. We also hope to study and to resolve some of the psychometric, social, legal, educational, economic and ethical issues involved with the use of standardized tests in making decisions about handicapped persons.

A testing manual entitled, "Vocational Evaluation of Handicapped College Students: A Testing Manual" is available through the Brookdale Community College Career Clinic.

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PROBLEM

Many of the most important decisions made about individuals in our society such as placement in advanced, remedial, or special education programs, admission to college, choosing a career, selection for employment or a military assignment, are made, partly, on the basis of test results. The use of tests (when administered properly) may offer some advantages for handicapped people. Tests provide objective information that may help overcome negative biases against disabled people; they can show a person's strengths as well as their weaknesses. Indeed, ability tests were originally developed in order to provide a more objective and relevant basis for evaluation than social class, physical appearance or other observable characteristics. A good objective measure of aptitude may be especially important for handicapped people who may have had fewer opportunities than nonhandicapped people to demonstrate their abilities.

For years however, the testing of handicapped people has left much to be desired. And these problems related to testing serve to further frustrate handicapped people who are trying to demonstrate their abilities and to participate fully in American society.

The goal of independence and equal functioning of a handicapped individual has also been the theme of the recent federal legislature such as the Education for All Handicapped Children Act which states ,

that handicapped children should be placed in the least restrictive educational environment possible and this theme was again underlined in 1973 with the passing of the Rehabilitation Act which was established to end discrimination and to bring the handicapped person into the mainstream of American life.

Regulations implementing Section 504 of the Rehabilitation Act of 1973 state that handicapped persons can be tested in a way that will not reflect the effects of their handicap and that the resulting test scores will be considered comparable to those of nonhandicapped people. However, since fully developed test modifications do not exist for all handicapped individuals and there is little information about the comparability of available tests for handicapped and nonhandicapped groups there has been hesitancy and uncertainty about fully complying with the Section 504 regulations. The problems related to the testing of handicapped persons is complex but not insurmountable. With the mainstreaming of handicapped persons increasing numbers of guidance personnel, teachers, and counselors are being asked to assess the abilities, aptitudes, values, and career interests of handicapped persons. When an educator accustomed to administering vocational interest and aptitutde measures with normal students first encounters a student with a visual impairment or a student does not have use of his or her hands many questions arises: "What measures should I use?" "What modifications should I make?" Can I use

regular norms for the evaluation of othe test?". And often as a result of this confusion and lack of information the test is not administered. But denying a person the opportunity to take a test along with their peers may be seen as an infringement on his or her civil rights. These complications must be dealt with; they cannot be ignored and they will not go away.

Some of the issues which must be addressed are:

> What type of adaptations of testing procedures of the environment are necessary to provide equal access for the individuals with different disabilities to the tests currently administered for vocational assessment to students at the college? Which of the possible adaptations are best?
>
> What is the significance of the testing scores when administered within adapted testing situations? How are they to be interpreted?
>
> Are there other testing instruments which are similar to those currently used with non-disabled populations which have been used with success with a particular disabled population? Do norms exist for that specific group?
>
> What is the most cost and time efficient way to administer these vocational instruments and still preserve their alidity and usefulness to the student?

It is our goal to reconcile current testing services and its practiceas related to vocational assessment with the requirements for testing itemized by the federal regulations implementing Section 504 of the Rehabilitation Act of 1973. We also hope to study and to resolve some of the psychometric, social, legal, educational, economic and ethical issues involved with the use

of standardized tests in making decisions about handicapped persons.

OBJECTIVES:

In order to accomplish this contract the following objectives were to be completed:

1. Research will be conducted which will result in the formulation of a vocational test battery for handicapped adults.

2. Testing procedures and methods of administration & evaluation will be adapted to the specific needs of persons with handicaps. This may include any or all of the following: adapted test measures, use of tests which have been normed on handicapped populations, adapting the testing environment, and/or providing assistance in the instance of interpreters, writers, readers, or other such support services.

RESEARCH

A review of the literature conducted to reveal research related to the problem of testing and conducting a vocational assessment of handicapped persons reflected the complexity of this undertaking by the blatant absence of relevant references. A survey was conducted of magazines, journals, and other academic and literary publications which discussed recent developments in the fields of education, career development, vocational guidance, psychology, counseling, vocational rehabilitation and other areas and few significant references were discovered on the specific topic of vocational testing for handicapped adults.

Studies have been conducted which examine the use of specific assessment instruments such as the Peabody Picture Test, the Minnesota Multiphasic Personality Inventory, The Strong Campbell Interest Inventory, and the Weschler Adult Intelligence Scale as applied to disabled veterans, vocational rehabilitation clients or to persons with orthopedic disabilities or clef palates. Campbell, Clarkson, and Sinsabaugh found that the Minnesota Multiphasic Personality Inventory was a useful instrument in the identification of disabled veterans who are likely to experience difficulty in a post hospital rehabilitation program. (Journal of Personality Assessment; June 1977; pp 266-269) De Vinney, and Thomas shed light on the testing attitudes of vocational rehabilitation clients when their study revealed that these clients

experienced no more test anxiety than other persons subject to a similar testing situation. (Vocational Evaluation and Work Adjustment Bulletin; Winter 81; pp 171-175)

Interesting and informative as these few isolated studies are, their example serves to demonstrate the intermittent and sporadic nature of the existing research on the topic of vocational assessment of handicapped persons. Not a single reference was found in the professional publications from 1978 to present on the specific topic of vocational assessment of handicapped college students.

However, vocational testing for the broader topic of special populations has been an area of serious study in recent years. The research revealed studies about the use of a variety of test instruments with such populations as alcoholics, prisoners, schizophrenics, drug abusers, sociopaths, those with brain disfunction, and many others. Studies were also conducted to examine testing procedures, the impact of testing, and evaluation and applied inferences with college students without handicaps. These research references indicate that such research is indeed possible and productive, and we can conclude, could be applied to handicapped college students as well.

An area of significant contributions of research were discovered by the author of this proposal to be the books and other materials published by agencies or other organizations which clustered

around the needs of specific disabilities such as the American Foundation for the Blind, Division of the Deaf, or United Cerebral Palsy. Two particular references which yielded a great body of useful information were Measures of Psychological, Vocational, and Educational Functioning in the Blind and Visually Handicapped by Geraldine Scholl, and Ronald Schnur, published by the American Foundation for the Blind in New York in 1976 and Ability Testing of Handicapped People; Dilemma for Government, Science, and the Public edited by Susan W. Sherman and Nancy M. Robinson and authored by the Panel on Testing of Handicapped People sponsored by the National Research Council, published by National Academy Press in Washington, D.C. in 1982.

Both of these important works address the issues and questions involved in testing handicapped persons and make recommendations for test selection, administration, and evaluation. Specific tests are also listed and data presented regarding their adaptability, availability, norms and related pilot testing. Research reports like these provide the foundation for conducting further studies on the effectiveness of conducting vocational assessments for handicapped college students.

Since 1980, Brookdale Community College's Career Services department has received grant funds to conduct a vocational

program for handicapped students and members of the community. In order to meet its stated objectives the project staff hired a testing consultant to conduct a limited study of vocational assessment techniques used with success within various settings. Ms. Lynne Schmelter-Davis, M.A., Coordinator of the Brookdale Career Clinic, a successful vocational testing program, gathered information by personal interviews with rehabilitation professionals at the International Center for the Disabled, Threshold of Berks County, Rehabilitation Center of the John F. Kennedy Hospital, Division of Vocational Rehabilitation and Marlboro State Hospital. In the conclusion of her report Ms. Schmelter-Davis states,

> "More expertise in adapting presently used test to the handicapped population needs to be developed...Tests presently available(as mentioned in the report) should be used more frequently with a follow-up study in regard to the assessment's efficacy with the handicapped population."

Our rationale for proposing this research study was based on many factors, including the legal rights of handicapped persons to the same testing services as other students, the special benefit of objective assessment and evaluation to handicapped persons, and the effectiveness of career testing and vocational assessment in career guidance and vocational education. We believe that handicapped persons will benefit by having access to adaptive testing instruments and to those

professionals who know how to utilize them. The serious study presently being given to the consideration of testing with special populations and the research references which substantiate the efficacy of testing with college students have demonstrated the feasibility of this project. We believe that the current research conducted both nationally and previously, at Brookdale itself has provided us with a theoretical foundation to explore testing and vocational assessment procedures with the handicapped population now being served at Brookdale Community College.

PROCEDURES USED:

A review of possible appropriate tests was undertaken. Test reviews in Mental Measurement Yearbooks (Buros-Volume 1 - 8) was used for initial screening. Selection for inclusion into the battery was based mainly on issues of reliability,validity, appropriateness of use with college students and adaptability for testing of handicapped. Lesser but still important variables included price, availability of tests, ease of administration and scoring and possible use of group testing procedure.

Journal and book articles specific to testing the handicapped were read with a view toward the possible inclusion of tests developed solely for testing blind or deaf students. A list of those books and articles is attached to this report.
(Appendix I)

Specific tests were ordered for a more thorough review. Meetings with the Project Director of the Career Services for the Handicapped were held to review the project.

Organizations and experts who work with handicapped populations were consulted to gain information for this project. This included the N. J. Division of Vocational Rehabilitation in Eatontown and New Brunswick, Fairlawn Assessment Program, Katzenbach School for the Deaf, Commission for the Blind, Neville Institute, and N. J. Division of the Deaf.

Due to the poor participant response and the lateness of the year it became apparent that field testing of this

Procedures Used (cont)

assessment battery would not be feasible. Since research was almost complete it was decided to modify the research project. A letter was sent to the Department of Education and approval was obtained for this modification. The modification was consistent with the contractual obligations of this project in that the objective outlined in the contract, as stated earlier in this report, could be met. The research on the tests would be completed and the findings of this research would be published in a Testing Manual for the handicapped. An outline for the manual was developed and the manual was written which includes a synthesis of the research and information on specific aptitude, ability, personality and interest tests with appropriate adaptations for the handicapped student clearly stated.

Since we did not want to disappoint any handicapped students, a letter was sent to all Career Services for the Handicapped Students and potential students to inform them of the availability of testing if they so desired.

FINDINGS/INTERPRETATION OF FINDINGS

The following is a summary of the findings and interpretation of the findings relating to this project:

It is important for the counselor to be aware of the hetereogeniety of handicapped people. For example, relatively few people with a visual impairment have no useful vision or are classified as totally blind. Legal blindness is usually defined as having "vision in the better eye when corrected of less than 20/20" (American Medical Association). Twenty/two hundred means the visually disabled person sees at 20 feet what a full-sighted person sees at 200 feet. There are two not-so-formal definitions of blindness useful to the evaluator. The first, travel vision, depends a great deal on the individual and may be defined simply as the ability to walk, or use public transportation unaided. A second definition, used by the U.S. National Health Survey (1959), is the inability to read ordinary newspaper print with glasses. Of the three definitions given, the third has the ciosest relationship to the concepts of this manual, which defines blindness as the inability to perceive and read sentences, words, letters, numbers, etc., in the form that they appear on a standardized test or test answer sheet. In testing the visually-impaired, the question is simply can the student see well enough to take a test in its original format. If not, the problem becomes one of modifying the test so that visual problems do not interfere with or affect the person's ability to perform on the test.

The same hetereogeniety applies to the deaf. Hearing loss is a complex problem and can be discussed both in terms

of physical loss and psychological loss. From a developmental point of view, a hearing loss becomes a handicap when it prevents normal auditory contact with the environment, especially when it prevents hearing conversation. The two major variables affecting hearing loss in interpersonal communication are the degree of loss, usually given in decibels and the age of onset. The range of human speech is between a frequency of 250 and 4000 cycles per second; and between 50 and 65 decibels. Based on these numbers, four graduations of hearing loss are defined in terms of decibels;

I. A loss of 30 to 45 decibels - At this level, scanning and background functions of hearing are affected resulting in impaired awareness and environmental detachment. The use of amplification and closeness to the speaker can overcome this degree of loss.

II. A loss of 45 to 65 decibels - The loss of background-foreground use of hearing largely eliminates the scanning function of hearing, and social relationships are clearly affected. Although the use of amplification makes conversation readily possible, conversation is essentially limited to one person or to a small group because all sound must be given equal attention. This person experiences considerable detachment.

III. A loss of 65 to 80 decibels - At this level both personal-social and general enviromental contact is difficult, and the use of amplification is less satisfactory than in graduation II. There is a need for considerable reliance on the other systems

for monitoring, especially on vision and touch. Personal-social relationships are most satisfying when they are with deaf people.

IV. A loss of 80 to 100 decibels - At this profound hearing loss level, amplification is effective mainly in maintaining intelligible speech and focusing attention to loud environmental sounds. The use of vision and touch is mandatory in maintaining homeostatic equilibrium. Most social relationships are with others having profound deafness.

There are three major methods of non-hearing communication among the deaf. In lip or speech reading, the client obtains the content from careful attention to the speaker's lips, facial expressions, and throat movements during speaking. Sign language is an ideographic method of communication in which words and ideas are graphically made using standardized gestures of arms, hands, and body. The third, finger spelling, uses standard positions of the fingers of one or both hands to form letters of the alphabet, with words or sentences being spelled out in straight language. Some students will use a combination of these methods. The evaluator who works with deaf people must know these methods of commincation as proficiently as the evaluator who works with Spanish clients must know Spanish. Thus, the first step in testing a deaf student is to have a good indication of how well he can communicate with you and you with him.

Motor-impaired students could be paraplegic, quadraplegic or spastic in all manner of degree. "Paralysis" may not mean total lack of movement or control. Some individuals will have learned adaptive ways of communicating with the written word even if they are unable to write with their hands in normal fashion.

In general, the person himself is the best judge of what conditions are best for his particular degree of vision, hearing or movement. Additionally, the counselor needs to know the degree of impact due to the sensory or motor loss. This degree is related to whether the individual was born with the impairment (a congenital condition) or whether he acquired it at a later time. Further, the age at which the loss is sustained is important. In general, the younger a person is, the greater the influence of the loss of development. The type of onset may also be relevant. For example, a sudden loss may cause a different reaction than a loss that is gradual. Knowledge of the age of onset, type of onset, etiology, and diagnosis will be helpful information for the examiner in preparing to meet the client for the first time.

The most pressing question for the examiner is to determine what degree of test failure can be attributed to impaired function of sight, hearing or movement and what can be attributed to an inability to perform the task. The examiner will need to assess to what degree a particular test item is tapping a student's handicap to be sure a failure is not incorrectly recorded as a basic task failure. This is complicated since a severe disability is often seen as such an all-encompassing condition that it is tempting to attribute all findings to the presence of an impairment. This generalizing is especially true when the student's physical appearance, mannerisms, passivity, or lack of facial expression make him appear limited in ability or affect. Careful observation and extended evaluation may help to lessen these dangers.

The test instruments included in the manual were all standardized tests. Since standardized tests are designed by nature to be used in a standardized way the suggestions for adaptations of these tests for handicapped students will affect the

reliability and validity of the test instrument in an unknown way. For example, no one really knows how the presence of a reader, writer or interpreter will affect the outcome of a test designed to be read silently to oneself. If all the tests which do not have norms developed for the handicapped in adapted procedures were eliminated from consideration we would in effect stop using standardized instruments to evaluate this group of people. Anyone with a pragmantic approach could see that this solution is unrealistic. The main consideration for the examiner is to be aware of the difficulties and to use professional judgment, caution and discretion in interpretation of the results.

DISSEMINATION OF ACTIVITIES PLANNED

The manual will be printed and made available to all the secondary institutions who wish to obtain one. A letter will be mailed to the secondary institutions in the Northeast and Middle Atlantic States making the staff aware of the availability of this manual.

STRATEGIES OR ACTIVITIES EMPLOYED TO
ELIMINATE SEX BIAS AND SEX ROLE STEREOTYPING

The vocational assessment instruments selected were screened so that any sex bias would noted. All test materials; i.e. manuals, testing instruments and instructions were reviewed to determine if there was any significant sex bias.

C. SUMMARY

1. CONCLUSIONS:

Publication of a Test Manual for Handicapped college students is expected to fill a gap heretofore ignored. This manual will be made available to all post-secondary schools hopefully insuring that the handicapped college student will be able to avail himself of the same services as are available to any other student. Any interesting side benefit to this publication of research results, is that many counselors will become aware of the existence of tests that they may not have been cognizant of before and in their search to comply with Federal legislation for testing of handicapped students they will discover these tests for their normal population as well.

This research has demonstrated that the adaptation of tests to the handicapped population is limited only by the lack of imagination and/or expertise of the examiner/counselor. If one wants to use these assessment and counseling tools with all students than one will figure out a way to do exactly that. The Manual should stimulate this kind of interest and spur counselors on to developing adaptive techniques for their own "favorite" testing devices.

2. RECOMMENDATIONS

The obvious recommendation is for further study in this area which would include large amounts of field testing of the adaptive techniques which have been developed. It is suggested that such field testing be conducted across institutions to insure an adequate population of such student. Also, input from different institutional personnel and perspectives would greatly add to the validity of the collected data. A scientifically designed experimental approach would be most appropriate.

Lastly, it is important to reach those students and counselors at the secondary and even elementary school levels. There are those handicapped students who will never become part of a college assessment program simply because of the lack of realistic appraisal of their abilities, aptitudes and the like in the lower grades. All personnel who deal with students need to learn how to evaluate an individual without evaluating the physical handicap.

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